

REMARKS

Claims 1, 2, 3, and 15 have been amended to clarify the invention and claims 26 and 27 have been added. No new matter is introduced by the amendments and new claims. The amendment of claim 1 and new claims 26 and 27 are supported on page 11, line 29 through page 12, lines 8, among other places. Claims 1-27 remain pending.

The Examiner rejected claims 1 and 9-14 under 35 U.S.C. §102(b) as being anticipated by Garllarda et al. (U.S. patent 6,539,106). The Examiner has also rejected claims 4 and 5 under 35 U.S.C. §103(a) as being unpatentable over Garllarda et al. in view of Talbot et al. (US 6,091,249).

Claim 1 is directed towards a method “for detecting electrical defects on test structures of a semiconductor die, the test structures including a plurality of electrically-isolated test structures and a plurality of non-electrically-isolated test structures, the test structures each having a portion located partially within a scan area.” Claim 1 also includes “scanning the portion of the test structures located within the scan area to obtain voltage contrast images of the test structures’ portions” and “analyzing the obtained voltage contrast images to determine whether there are defects present within the test structures, wherein the obtained voltage contrast images have a pixel resolution size which is greater than a dimension of the test structures.” Claim 15 is directed towards a computer readable medium and also recites “wherein the obtained voltage contrast images have a pixel resolution size which is greater than a dimension of the test structures.” Such a image resolution allows rapid analysis of the test structure images for detecting defects.

The Examiner has indicated that claims 2, 3, and 6-8 would be allowable if rewritten to independent form including all of the limitations of the base and intervening claims. For instance, the limitations of claim 1 combined with claim 3 have been deemed patentable over the cited references. It is assumed that the Examiner agrees that the cited references fail to teach or suggest the features of claim 3: “wherein the a pixel size nominally equivalent to two times a width of the test structure's line width to maximize throughput at optimal signal to noise sensitivity.” It is also respectfully submitted that the cited references fail to teach or suggest the feature of claims 1 and 15: “wherein the obtained voltage contrast images have a pixel resolution which is greater than a dimension of the test structures.”

The primary reference Garllarda et al. generally discloses voltage contrast defect detection methods, where an image is obtained of the test structure. See Abstract. Although Garllarda et al. briefly mentions how image pixels are analyzed, *e.g.*, averaging pixel values over a test feature image (Col. 5, Lines 45-50), Garllarda et al. fails to disclose or suggest an image

resolution size which is greater than a dimension of the test structures as claimed in claims 1 and 15. In fact, Garllarda et al. teaches the opposite. In Column 14, Lines 42-62, Garllarda et al. teaches that a number of pixels are grouped within the boundaries of a feature. The secondary reference Talbot et al. also fails to teach or suggest such limitation. Since the cited references fail to teach or suggest an image resolution size which is greater than a dimension of the test structures as claimed in claims 1 and 15, it is respectfully submitted that claims 1 and 15 are patentable over the cited references.

The Examiner's rejections of the dependent claims are also respectfully traversed. However, to expedite prosecution, all of these claims will not be argued separately. Claims 2-14 and 16-27 each depend directly from independent claims 1 or 15 and, therefore, are respectfully submitted to be patentable over cited art for at least the reasons set forth above with respect to claims 1 and 15. Further, the dependent claims require additional elements that when considered in context of the claimed inventions further patentably distinguish the invention from the cited art.

Applicant believes that all pending claims are allowable and respectfully requests a Notice of Allowance for this application from the Examiner. Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below.

Respectfully submitted,
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